

## APPENDIX C

### WILDLIFE

#### METHODOLOGY

##### Bald Eagle

Bald eagle distribution is based on results of the National Wildlife Federation's bald eagle mid-winter survey that has been conducted in the Shoshone District since 1979. Major open rivers and large bodies of water were surveyed by fixed wing and additional routes were driven. All details are on file in Shoshone.

##### Bliss Rapids Snail

Information on this poorly-known species was taken from Bowler (1980) and Taylor (personal communication of 2/13/84).

##### Ferruginous Hawk and Swainson's Hawk

Ferruginous hawk and Swainson's hawk nest sites were inventoried in 1976 as part of a systematic raptor survey lead by Donald P. Kyker, Jr. The report is on file in Shoshone. Additional searches specifically for ferruginous hawk nests were conducted by Terrell Rich in 1981, 1982, and 1983. Effects of the alternatives were assessed by professional judgment.

##### Burrowing Owl

Burrowing owl nest sites were searched for in 1976 as part of a systematic raptor survey lead by Donald P. Kyler, Jr. The report is on file in Shoshone. Since 1976, the Monument Area Biologists, Jim Silva and Terrell Rich, have both put considerable effort into systematic nest site searches and habitat

*Methodology*  
*Burrowing Owl*

use. Several detailed reports are on file in Shoshone. Effects of the alternatives were assessed by professional judgment.

Shoshone Sculpin

Shoshone sculpin habitat and population sizes were studied by Jack Griffith of the Department of Biology, Idaho State University, under contract with the Shoshone District BLM. Possible effects of the alternatives on the sculpin were taken from the final report, "A survey of Shoshone Sculpin (Cottus greenei) populations in Box Canyon and Blue Heart Springs, Idaho (1981)." This report is on file in Shoshone.

Method for Calculating Effects on Wildlife Numbers

Numerical estimates of the effects of each alternative on populations of ring-necked pheasants, gray partridge, pronghorn, mule deer, and non-game species were made to aid evaluation of alternatives. For each species, the total habitat acreage was partitioned into categories of different habitat quality and, hence, different densities of animals. The net gain or loss of animals in each alternative was then determined by summing the gains or losses of animals caused by each action in that alternative. Where net effects seemed unreasonable, in light of professional judgment, a density value was changed uniformly in all alternatives and net effects recalculated. This was repeated until all effects of individual activities and all net effects seemed reasonable. The estimates listed are for general comparison only. Accuracy is probably within 25 to 50 percent of true numbers. All assumptions, density estimates, and calculations are on file in Shoshone.

Ring-Necked Pheasant and Gray Partridge

Total current numbers of pheasants and gray partridge in the planning area were estimated using data in "A Plan for Managing Idaho's Upland Game Resources in 1981-1985" (draft) and "Annual Upland Gamebird Report 1978" by the Idaho Department of Fish and Game, and "Methodology for Computing Wildlife Economic Values for use in Activity Plan Benefit/Cost Analysis", by the Idaho State Office, BLM (1981). Estimates of habitat quality on Isolated Tracts was aided by a special survey of these tracts, existing and potential, conducted by Rebecca Parmenter in 1982. This report is on file in Shoshone. Effects were calculated as above.

### Pronghorn

Pronghorn numbers were taken from "A Plan for Managing Idaho's Pronghorn Antelope, Moose, Bighorn Sheep and Mountain Goat Resources in 1981-1985" (draft) by Idaho Department of Fish and Game. Pronghorn distribution at different times of the year was determined by plotting all known sightings, by date, on 1 inch = 1 mile maps. Sighting data came from BLM Biologists' notebooks, wildlife observation forms, and aerial surveys, and from Idaho Department of Fish and Game's Wildlife Inventory Report. These data include both incidental sightings and systematic surveys. Effects were calculated as above.

### Mule Deer

Mule deer numbers were taken from "Mule Deer 1981-1985" species management plan by Idaho Department of Fish and Game. Distribution and effects were determined as for pronghorn.

### Non-Game

Non-game species are represented by breeding pairs of non-game birds. Estimates of nesting densities of these species are based on three years of data from ten line transects placed in different xeric habitat types in the planning area. All data and references are on file in Shoshone.

### Sage Grouse

Sage grouse lek sites and seasonal distribution data have been assembled from BLM Biologists' notebooks, wildlife observation reports, and systematic surveys. The Wildlife Inventory Report by Idaho Department of Fish and Game and other records from that agency have been searched. Total numbers of birds were determined by standardizing the maximum number of males on each known lek by the count at Steamboat Lake, which has been exceptionally well monitored since 1954. To the total male count was added an equal number of females and three young per female.\* This was taken as a maximum population size. A minimum population size and effects were estimated by professional judgment.

\* Bob Autenrieth, personal communication.

*Methodology*  
*Hybrid Cutthroat/Rainbow Trout*

Hybrid Cutthroat/Rainbow Trout

Hybrid cutthroat/rainbow trout information was obtained from Bob Bell (personal communication), Fishery Biologist for Idaho Department of Fish and Game. Possible effects of the alternatives were taken from a report by Alan Thomas (1980) entitled "Impacts of Irrigation Runoff on a Unique Fishery Resource in Vineyard Creek (Jerome County)."

Isolated Tracts

To aid in the alternative development of this plan, all existing Isolated Tracts and many potential Isolated Tracts were categorized by three staff biologists as being of high, medium, or low quality. Factors considered included the degree of habitat improvement made to date, quality of pheasant winter and nesting habitat, accessibility, presence of sensitive species, presence of riparian habitat, recreation value, and degree of isolation from other good wildlife habitat.

CRITERIA FOR SELECTING ISOLATED TRACTS FOR WILDLIFE (L11)  
FROM AGRICULTURAL ENTRY (T2) AREAS

As discussed in the description of the alternatives, up to 25 percent of the T2 areas could be retained in public ownership and managed as L11 areas under the Isolated Tracts HMP. The areas would be selected on a case-by-case basis as T2 lands are considered for transfer.

The following criteria are intended to ensure that sufficient habitat is provided for upland gamebirds, primarily winter habitat for ring-necked pheasants, within areas developed for intensive agriculture. Since pheasants are dependent on agriculture for survival, selection of tracts for wildlife management which would make agricultural development proposals unfeasible would benefit neither pheasants nor agricultural development. In these cases, arable land would not be selected for retention and management as L11 areas.

*Criteria For Selecting Isolated Tracts For Wildlife (L11)  
From Agricultural Entry (T2) Areas*

Criteria

1. Tracts selected for management as L11 areas would be distributed through the T2 areas so that areas developed for agriculture are within one-half mile of suitable winter cover.
2. Tracts would generally be selected in areas with existing suitable winter habitat (sagebrush live crown cover greater than 15 percent). However, tracts with potential for developing suitable cover could be selected if their location is key.
3. The minimum size of selected tracts would be 20 acres.
4. Tracts would not be selected from areas subjected to grazing unless the grazing was subsequently excluded.